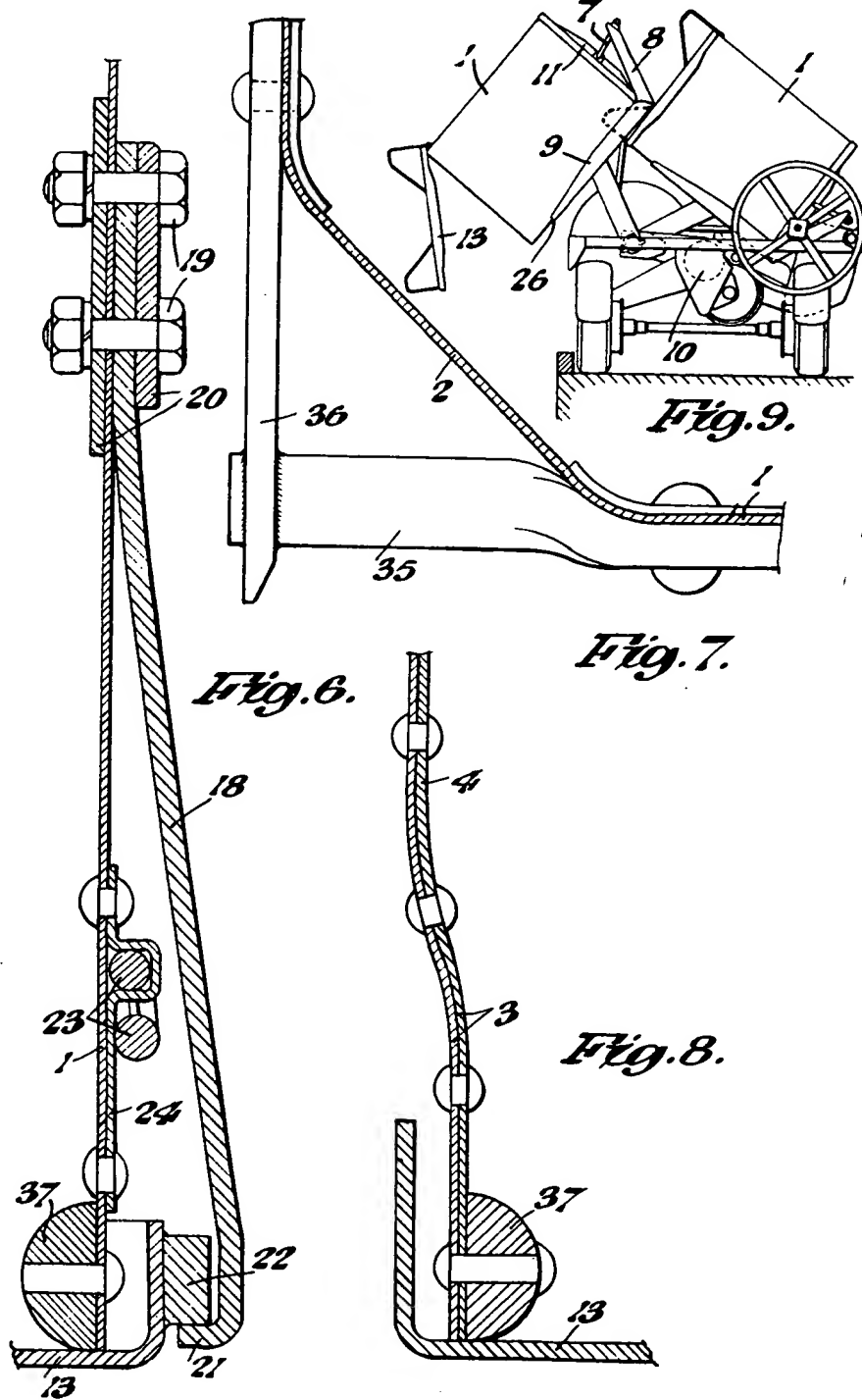


[This Drawing is a reproduction of the Original on a reduced scale.]



PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION

464651

EXAMINER'S
COPY

Div.

Improvements in Bins for Refuse or other Purposes

We, OLIVER DANSON NORTH, of 76, Elm Park Mansions, Park Walk, Chelsea, London, S.W.10, British Subject, PERCY GARIBALDI HUGH, of High Holborn House, 52 to 54, High Holborn, London, W.C.1, British Subject, and SCAMMELL LORRIES LIMITED, of High Holborn House, 52 to 54, High Holborn, London, W.C.1, a British Company, do hereby declare the nature of this invention to be as follows:—

This invention comprises improvements in bins for refuse or other purposes and is primarily intended to be applied to bins for collecting refuse and which are adapted to be loaded on to a vehicle and transported to a convenient place where their contents are emptied out and are then returned unloaded from the vehicle ready to be refilled. Although primarily intended for use in the collecting and disposal of refuse the bins may also be applied to the collecting, transport and delivery of other materials.

According to this invention the improved bin comprises a cylindrical or rectangular metal container adapted to stand upright on one end and provided with an opening or openings at or near its top and having a hinged or detachable lower end so as to permit the contents to be emptied out through the lower end when desired. Suitable lugs are provided near the upper end of the bin and these lugs are adapted to be engaged by suitable hooks or suspending means forming part of a lifting device mounted on a road vehicle and adapted to manipulate the bins and transport them from place to place. A suitable cover or one or more hinged doors is or are provided for the top of each bin and the means engaging the lugs for lifting the bin is also arranged to retain the cover or covers in the closed position during manipulation of the bin. The lower end of the bin is preferably hinged along one edge and is provided with suitable catches or securing means for retaining the other edge in engagement with the bin. These catches may be readily released so as to permit the lower end to turn about its

hinge when it is desired to discharge the contents from the bin. The bins may be arranged to stand directly upon the cover at the lower end or these may be provided with suitable feet in order to raise the pin off the ground to a suitable height. These feet may be provided at each corner of the lower cover and may be made of sheet metal or strips bent to a suitable form. Where it is desired to move the bin manually from the position it normally occupies to a loading position and from an unloading position back to its usual position for receiving refuse or other material, the feet are made of a suitable height to enable a small wheel trolley to be pushed under the bin between the feet and then elevated for example by depressing the handle of the trolley or by other means so as to lift the bin off its feet until it is completely supported on the trolley when it may be readily moved from place to place.

Each bin may be made from suitable stout sheet material bent to a cylindrical or rectangular form and is adapted to stand on end and is preferably greater in height than in width. The body of the bin may be reinforced by stout metal bands or rims and suitable reinforcement may be provided in convenient positions where the bin is adapted to rest in a cradle during transport. With bins of rectangular form these reinforcements may be provided at two adjacent corners of each bin. Two or more such reinforcements may be provided to each of the two corners. Suitable lugs or projections may be provided at convenient positions on the bin to engage with portions of a cradle in which the bin is adapted to rest during transport.

In one arrangement each bin may be provided with a pair of lugs upon opposite sides at its upper end and a stout cover of metal or other suitable material is suitably shaped and arranged to be placed over the open upper end of the bin when it is to be taken away for emptying. The cover may be provided with apertures through which these lugs project so that when hooks or links are secured to the lugs for lifting the bin

[Price 1/-]

the same operation will secure the cover in position. In an alternative arrangement in the bin may be provided with a pair of hinged covers sloping upwardly toward the lugs arranged at either side of the bin so that the top of the bin is of an inverted V-shape. The covers may be hinged near their outer edges and may meet together close to the lugs

at the side of the bin so that when hooks or links for lifting the bin are secured to the lugs the covers may be secured in the closed position.

Dated this 21st day of November, 1935.

RAYNER & CO.,

5, Chancery Lane, London, W.C.2.
Agents for the Applicants.

COMPLETE SPECIFICATION

Improvements in Bins for Refuse or other Purposes

We, OLIVER DANSON NORTH, of 76, Elm Park Mansions, Park Walk, Chelsea, London, S.W.10, British Subject, PERCY GARIBALDI HUGH, of High Holborn House, 52 to 54, High Holborn, London, W.C.1, British Subject, and SCAMMELL LORRIES LIMITED, of High Holborn House, 52 to 54, High Holborn, London, W.C.1, a British Company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in bins for refuse or other purposes and is primarily intended to be applied to bins for collecting refuse and which are adapted to be loaded on to a vehicle and transported to a convenient place where their contents are emptied out and are then returned unloaded from the vehicle ready to be refilled. Although primarily intended for use in the collecting and disposal of refuse the bins may also be applied to the collecting, transport and delivery of other materials.

The chief object of this invention is to provide a construction of bin which is suitable for being picked up by, and supported upon, cradles carried by a vehicle. A vehicle with a set of cradles suitable for functioning in this manner is described and claimed in co-pending Application No. 459,738. Another object of this invention is to provide a bin with an arrangement of parts particularly adapted for engagement with, and coupling to, a cradle on a vehicle as described and claimed in our said co-pending application.

According to this invention a bin comprises a quadrilateral section bin body, a base hinged to the lower end of the bin body, so that it may swing open to release the contents of the bin, a fastening device serving as a latch to keep the base closed and operable when desired to allow the base to open, projections at the top of the bin body adapted to receive

securing members carried by a lifting device, e.g. a cradle on a road vehicle, a lid or lids to the bin, and corner plates on two of the corners of the bin body projecting from or so shaped in relation to the bin body to provide abutments for engagement with parts of the said lifting device.

The said projections are preferably a pair of upstanding apertured lugs adapted to receive links depending from cradles provided on a vehicle for lifting and carrying the bins.

In carrying an embodiment of this invention into practice the bin can comprise a rectangular metal container with diagonal corners and adapted to stand upright on one end and provided with an opening or openings at or near its top and having a hinged or detachable lower end so as to permit the contents to be emptied out through the lower end when desired. Suitable lugs are provided near the upper end of the bin and these lugs are adapted to be engaged by suitable hooks or suspending means forming part of a lifting device, e.g. the beforementioned cradle, mounted on a road vehicle and adapted to manipulate the bins and transport them from place to place. A suitable cover or one or more hinged doors is or are provided for the top of each bin and the means engaging the lugs for lifting the bin is also arranged to retain the cover or covers in the closed position during manipulation of the bin. The lower end of the bin is preferably hinged along one edge and is provided with suitable catches or securing means for retaining the other edge in engagement with the bin. These catches may be readily released so as to permit the lower end to turn about its hinge when it is desired to discharge the contents from the bin. The bins may be arranged to stand directly upon the cover at the lower end or these may be provided with suitable feet in order to raise the bin off the ground to a suitable height. These feet may be pro-

vided at each corner of the lower cover and may be made of sheet metal or strips bent to a suitable form. Where it is desired to move the bin manually from the position it normally occupies to a loading position and from an unloading position back to its usual position for receiving refuse or other material, the feet are made of a suitable height to enable a small wheel trolley to be pushed under the bin between the feet and then elevated for example by depressing the handle of the trolley or by other means so as to lift the bin off its feet until it is completely supported on the trolley when it may be readily moved from place to place.

Suitable projections or corner plates are provided on the bin adapted for engagement with parts of the said cradles.

In order that this invention may be clearly understood and readily carried into effect two sheets of drawings are appended hereto illustrating embodiments thereof, and wherein:—

Fig. 1 is a front elevation view of one form of bin in which a substantially flat top is adopted.

Fig. 2 is a view showing both the hinged and closure sides of the bin.

Fig. 3 is a half sectional plan of Fig. 1. Fig. 4 is a front elevation of a bin in which the top is closed by a pair of symmetrically inclined lids.

Fig. 5 is a detail sectional view to a larger scale taken on the line 5a 5a of Fig. 1 and showing a suitable manner of lapping or joining two sections of the bin body.

Fig. 6 is a detail sectional elevational view showing one of the fastening devices for receiving the hinged base of the bin in the closed position.

Fig. 7 is a detail plan view of one of a pair of corner members adapted to provide means for connecting the bin to a trolley or like device for manually transporting the bin.

Fig. 8 is a detail section on the line 8a 8a of Fig. 1, and

Fig. 9 is a diagrammatic view showing a vehicle adapted to carry the bins, and in which one of the bins is shown in the emptying position.

Referring to the drawings the two forms of bin body 1 shown are both of stout sheet metal and of rectangular section, and deeper than their maximum transverse dimension, the corners 2 being diagonal for the full vertical dimension of the bin. It is preferred to form the bin body of two wide U-section bodyparts overlapped and welded or rivetted together along the vertical centres of the wider walls as shown at 3

in Fig. 5. Such overlapped parts are so shaped that they provide a pair of opposed outwardly pressed vertical ribs 4 the inner surfaces of which constitute channels on which are rivetted at the upper ends thereof a pair of bars 5 projecting above the top of the bin body to provide a pair of apertured lugs 6 adapted to receive links 7 (see Fig. 9) on the free ends of a pair of horizontal limbs 8 of a cradle 9 carried by a suitable vehicle body 10, e.g. as described in our co-pending Application No. 459,738. These lugs 6 in the bin shown in Figs. 1, 2, 3 and 9 pass through registering apertures in a lid 11 (see Fig. 9), such lid being rested upon an interned flange 12 (see Fig. 3) at the rim of the bin body. By this means the lid is normally easily removed, but during lifting by one of said cradles and transport on the vehicle, the links 7 prevent removal of the lid.

The base of the bin is a dished or shallow tray like metal plate 13 fitting easily over the lower end of the bin body and hinged at one end to the lower edge of an end wall of the bin body. This is effected by means of two oblong corner plates 14 fixed to the said base and bent L fashion, and their vertical limbs rolled or formed as eyes, as at 15, to fit over a pair of horizontal pivot bolts 16 mounted in vertical corner plates 17 rivetted to the appropriate lower corners of the bin body. The hinged base 13 is held in the closed position by a pair of catches each in the form of a stout resilient bar or leaf spring 18 (see Fig. 6) secured at their upper ends by bolts 19 passed through the bin body and clamping or stiffening plates 20. Each catch member 18 is normally flexed outwards at an inclination as shown in Fig. 6 with its lower end, which is bent inwards hook fashion as at 21, engaging under a projection 22 on the lid 13. Such an arrangement provides a very strong and durable catch which is desirable with bins normally subject to heavy wear and rough treatment. To facilitate the necessary movement of the spring catches 18 to release the lid, each catch 18 has associated with it a member adapted to apply a lifting or cam action to the catch. A strong and simple device for this purpose comprises a length of circular section rod bent U-shape, the two limbs being shown in cross section at 23 in Fig. 6. One limb is supported for axial rotation in a bracket plate 24 rivetted to the side of the bin body. The other limb is free to be swung by hand or the insertion of a tool under it, so that it swings about the

axis of the supported limb and to bear against the spring catch 18 in order to raise it cam fashion. A split pin is passed through the outer ends of the said limbs of the U-shaped member to prevent it from sliding out of the bracket plate 24. When the lid is released to the open position, the U-shaped members 23 can be held in the catch raising position by the friction and pressure of the catches 18, so that if the base 14 is slammed to the closed position the resultant shock will release the U-shaped members from engagement with the spring catches 18, or in any event the attendant workman can easily knock the U-shaped members away from the catches 18. The spring catches 18 are fixed to the diagonal corners of the bin body and engage with projections 22 on the corners of the base 13.

Disposed just above the spring catches 18 and rivetted to the bin body are a pair of L-shaped plates 25 which form angle corner abutments for engagement against abutments formed at the point 26 (see Fig. 9) of each vertical limb of the cradle 9. A still further pair of L-shaped abutment plates 27 are rivetted to the same corners of the bin near the upper end for engagement with further appropriately located abutments on the said cradle.

The hinged base of the bin is formed with four feet 28 braced by cross bars 29 by means of which the base itself is protected from injury when dropped on the ground, and also spacing the said base from the ground to enable a suitable hand trolley to be pushed under the bin for manipulating it, it being apparent that the bin is somewhat bulky and heavy.

Instead of a single horizontal lid, one or a pair of symmetrically inclined lids 30 (see Fig. 4) can be provided, the top of the bin body being of substantially wide V-shape to allow of this latter arrangement. The lids are hinged at their inner edges at the points 31 and are held in the closed position by catches 32. A bowed leaf spring 33 can be connected across the two lids at points 34 each of which when a lid appropriate thereto is opened passes beyond a dead centre position in relation to the appropriate point 31 and thereby maintains the lid raised. When the lid is being closed the reverse action applies, resulting in the lid being properly closed.

To afford a means of temporary anchorage to a trolley or other suitable transporting member a stout pair of short rods 35 (see Fig. 7) are rivetted at one end somewhere about the mid-vertical

position to the end wall about the lower end of which the base hinges. The other end of each rod 35 is welded to a plate 36, these two plates 36 being rivetted to the longer vertical sides of the bin body. The bin illustrated in Fig. 4 has two pairs of members 35 and 36.

It will be appreciated that by adopting diagonal corners 2 as shown, that the plate members 17, 25 and 36 need not protrude substantially beyond the planes containing the sides to which they are rivetted, or in effect the said plates can be said to lie in linear continuity with the sides of the bin, and that by reason of the said diagonal corners the said plates provide abutments for engagement with a lifting cradle 9 and a suitable trolley.

The top and lower parts of the bin body are reinforced by substantially semi-circular section bars 37, their arcuate outer faces preventing trapping of refuse, and facilitating cleaning.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

(1) A refuse or like bin comprising a quadrilateral section bin body, a base hinged to the lower end of the bin body, so that it may swing open to release the contents of the bin, a fastening device serving as a latch to keep the base closed and operable when desired to allow the base to open, projections at the top of the bin body adapted to receive securing members carried by a lifting device, e.g. a cradle on a road vehicle, a lid or lids to the bin, and corner plates on two of the corners of the bin body projecting from or so shaped in relation to the bin body to provide abutments for engagement with parts of the said lifting device.

(2) A refuse or like bin according to claim 1 wherein the vertical corners of the bin body are diagonal and said corner plates are substantially L-shaped bars secured at their ends to the bin body so as to extend beyond said diagonal corners.

(3) A refuse or like bin according to claim 2 wherein a pair of short bar or rod members are fixed to the pin body so as to project in substantially the same plane as one side of the bin body in front of the other two of the said diagonal corners to provide abutments adapted to be engaged by retaining means on a hand trolley or the like.

(4) A refuse or like bin according to claim 3 wherein said short bar or rod members are fixed at one end to one side of the bin body and at their other ends

to plates fixed to the sides of the bin body at right angles to such side.

(5) A refuse or like bin according to claim 2 wherein said projections at the top of the bin body are lug like members which pass through apertures in the lid for the purpose set forth.

(6) A refuse or like bin according to claim 1 wherein the base of the bin is a shallow tray-like sheet metal member fitted over the lower end of the bin body.

(7) A refuse or like bin according to claim 1, or 6 wherein a pair of vertical stout leaf spring catches are fixed at their upper ends to the bin body and bent at their lower ends to form hook like abutments engaging under parts of the free end of the hinged base.

(8) A refuse or like bin according to claim 7 wherein said leaf spring catches press inwards at their free ends towards the bin base, and pivoted members are mounted on the bin body beneath said catches adapted to be adjusted to press the catches into and retain them in the bin base releasing position.

(9) A refuse or like bin according to claim 8 wherein each of said pivoted

members comprises a U-shaped length of circular section rod mounted by one limb in a support fixed to the bin body and adapted to be swung about the axis of such limb to press the other limb against the appropriate catch member for the purpose set forth.

(10) A refuse or like bin according to any of the preceding claims, wherein the bin body is composed of two stout sheet metal parts each bent substantially U-section with rectilinear sides and shaped and overlapped at their free ends to form vertical ribs or channels.

(11) A refuse bin or the like according to claim 1 wherein said projections project upwards between a pair of inclined lids arranged substantially inverted V fashion.

(12) A refuse bin or the like substantially as and for the purpose described with reference to the accompanying drawings.

Dated this 15th day of September, 1936.

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